

## 14. 1997 REFEREED PUBLICATIONS

### Laboratory for Atmospheres

Atlas, D., D. Rosenfield, and A. R. Jameson, 1997: Evolution of radar rainfall measurement: Steps and mis-steps. In *Weather Radar Technology for Water Resources Management*, B. Braga and O. Massambani, UNESCO Press, Montevideo, 1-60.

Brace, L. H., J. M. Grebowsky, and A. J. Kliore, 1997: Pioneer Venus orbiter contributions to a revised Venus reference ionosphere. *Adv. in Space Res.*, **19**, 1203-1212.

Cole, K. D., and W. R. Hoegy, 1997: Nonlinear whistlers: Implications for 100 Hz electric fields observed in the Venus ionosphere. *J. Geophys. Res.-Atmos.*, **102**, 14615-14623.

Donahue, T. M., D. H. Grinspoon, R. E. Hartle, and R. R. Hodges, 1997: Ion/neutral escape of hydrogen and deuterium: Evolution of water. *Venus II*, S. W. Bougher, D. M. Hunten, and R. J. Phillips, University of Arizona Press, 385-414.

Ferreira, R. N., and W. H. Schubert, 1997: Barotropic aspects of ITCZ breakdown. *J. Atmos. Sci.*, **54**, 261-285.

Richiardone, R., S. Alessio, F. Canavero, F. Einaudi, and A. Longhetto, 1997: Experimental-study of atmospheric gravity-waves and visibility oscillations in a fog episode (vol 18, pg 647, 1995). *Nuovo Cimento Della Societa Italiana Di Fisica C-Geophysics and Space Physics*, **20**, 131.

Ryzhkov, A., D. Zrnic, and D. Atlas, 1997: Polarmetrically tuned r(z) relations and comparison of radar rainfall methods. *J. Appl. Meteor.*, **36**, 340-349.

### Sounder Research Team

Lakshmi, V., E. F. Wood, and B. J. Choudhury, 1997: A soil-canopy-atmosphere model for use in satellite microwave remote sensing. *J. Geophys. Res.-Atmos.*, **102**, 6911-6927.

Lakshmi, V., E. F. Wood, and B. J. Choudhury, 1997: Investigation of effect of heterogeneities in vegetation and rainfall on simulated SSM/I brightness temperatures. *Inter. J. Rem. Sens.*, **18**, 2763-2784.

Lakshmi, V., E. F. Wood, and B. J. Choudhury, 1997: Evaluation of special sensor microwave/imager satellite data for regional soil moisture estimation over the red river basin. *J. Appl. Meteor.*, **36**, 1309-1328.

Mehta, A. V., and E. A. Smith, 1997: Variability of radiative cooling during Asian summer monsoon and its influence on intraseasonal waves. *J. Atmos. Sci.*, **54**, 941-966.

Otterman, J., D. Starr, T. Brakke, R. Davies, H. Jacobowitz, A. Mehta, F. Cheruy, and C. Prabhakara, 1997: Modeling zenith-angle dependence of outgoing longwave radiation: Implication for flux measurements. *Rem. Sens. Environ.*, **62**, 90-100.

Susskind, J., P. Piraino, L. Rokke, L. Iredell, and A. Mehta, 1997: Characteristics of the TOVS pathfinder path A dataset. *Bull. Amer. Meteor. Soc.*, **78**, 1449-1472.

### Tropical Rainfall Measuring Mission Office

De Oliveira, V., B. Kedem, and D. A. Short, 1997: Bayesian prediction of transformed gaussian random fields. *J. Amer. Stat. Assoc.*, **92**, 1422-1433.

Fokianos, K., B. Kedem, J. Qin, J. L. Haferman, and D. A. Short, 1997: On combining instruments. *J. Appl. Meteor.*, **37**, 220-226.

Haddad, Z. S., D. A. Short, S. L. Darden, E. Im, S. Hensley, M. B. Grable, and R. A. Black, 1997: A new parameterization of the raindrop size distribution. *IEEE Trans. Geosci. Remote Sensing*, **35**, 532-539.

- Han, D., Y. S. Kim, and M. E. Noz, 1997: Jones-matrix formalism as a representation of the Lorentz group. *J. Opt. Soc. Am. A*, **14**, 2290-2298.
- Han, D., Y. S. Kim, and M. E. Noz, 1997: Stokes parameters as a Minkowskian four-vector. *Phys. Rev. E*, **56**, 6065-6076.
- Kedem, B., Pfeiffer, R., and D. A. Short, 1997: Variability of space-time mean rain rate. *J. Appl. Meteor.*, **36**, 443-451.
- Oki, R., A. Sumi, and D. A. Short, 1997: TRMM sampling of radar-AMeDAS rainfall using the threshold method. *J. Appl. Met.*, **36**, 1480-1492.
- Short, D. A., P. Kucera, B. Ferrier, J. Gerlach, S. Rutledge, and O. Thiele, 1997: Shipboard radar rainfall patterns within the TOGA/COARE IFA. *Bull. Amer. Meteor. Soc.*, **78**, 2817-2836.

## Data Assimilation Office

- Alpert, P., H. Shafir, and D. Issahary, 1997: Recent changes in the climate at the dead sea- A preliminary study. *Climatic Ch.*, **37**, 513-537.
- Atlas, R., 1997: Atmospheric observations and experiments to assess their usefulness in data assimilation. *J. Meteor. Soc. of Japan*, **75**, 111-130.
- Chen, M. H., R. B. Rood, and L. L. Takacs, 1997: Impact of a semi-Lagrangian and an Eulerian dynamical core on climate simulations. *J. Climate*, **10**, 2374-2389.
- Chen, T.-C., J.-M. Chen, S. Schubert, and L. L. Takacs, 1997: Seasonal variations of global surface pressure and water vapor. *Tellus*, **49A**, 613-621.
- Chen, T.-C., J.-M. Chen, and S. Schubert, 1997: Interannual variation of atmospheric mass and the southern oscillation. *Tellus*, **49A**, 554-558.
- Christiansen, B., A. Guldberg, A. W. Hansen, and L. P. Riishojaard, 1997: On the response of a three-dimensional general circulation model to imposed changes in the ozone distribution. *J. Geophys. Res-Atmos.*, **102**, 13051-13077.
- Cohn, S. E., 1997: An introduction to estimation theory. *J. Meteor. Soc. Japan*, **75**, 257-288.
- DelSole, T., 1997: Absolute instability induced by dissipation. *J. Atmos. Sci.*, **54**, 2586-2595.
- Fox-Rabinovitz, M. S., G. L. Stenchikov, M. J. Suarez, and L. L. Takacs, 1997: A finite-difference GCM dynamical core with a variable-resolution stretched grid. *Mon. Wea. Rev.*, **125**, 2943-2968.
- Gierasch, P., R. Goody, R. Young, D. Crisp, C. Edwards, R. Kahn, D. Rider, A. DelGenio, R. Greeley, A. Hou, C. Leovy, D. McCleese, and M. Newman, 1997: The general circulation of the Venus atmosphere: An assessment. *Venus II*, S. W. Bougher, D. M. Hunten, and R. J. Phillips, University of Arizona, 459-500.
- Goldreich, Y., A. Freundlich, and P. Alpert, 1997: Rainfall anomaly over the lee side of Mount Carmel (Israel) and the associated wind field. *J. Appl. Meteor.*, **36**, 748-762.
- Joiner, J., and P. K. Bhartia, 1997: Accurate determination of total ozone using SBUV continuous spectral scan measurements. *J. Geophys. Res-Atmos.*, **102**, 12957-12969.
- Jusem, J. C., and R. Atlas, 1997: Diagnostic Evaluation of Vertical Motion Forcing Mechanisms by Using Q-Vector Partitioning. *Mon. Wea. Rev.*, **126**, 25.
- Kalnay, E., D. L. T. Anderson, A. F. Bennett, A. J. Busalacchi, S. E. Cohn, P. Courtier, J. Derber, A. C. Lorenc, D. Parrish, J. Purser, N. Sato, and T. Schlatter, 1997: Data assimilation in the ocean and in the atmosphere: What should be next? *J. Meteor. Soc Japan*, **75**, 489-496.

- Krichak, S. O., P. Alpert, and T. N. Krishnamurti, 1997: Interaction of topography and tropospheric flow - A possible generator for the Red Sea Trough? *Meteor. and Atmos. Phys.*, **63**, 149-158.
- Krichak, S. O., P. Alpert, and T. N. Krishnamurti, 1997: Red sea Trough/cyclone development - Numerical investigation. *Meteor. and Atmos. Phys.*, **63**, 159-169.
- Lin, S.-J., 1997: A finite-volume integration method for computing pressure gradient force in general vertical coordinates. *Quart. J. Royal Meteor. Soc.*, **123**, 1749-1762.
- Lin, S.-J., and R. B. Rood, 1997: An explicit flux-form semi-Lagrangian shallow-water model on the sphere. *Quart. J. Royal Meteor. Soc.*, **123**, 2477-2499.
- Lin, S.-J., and R. T. Pierrehumbert, 1997: Comment on richardson criteria for stratified vortex motions under gravity. *Physics of Fluids*, **30**, 1231-1232.
- Lyster, P. M., S. E. Cohn, S. -J. Lin, R. Olsen, R. Menard, and L. P. Chang, 1997: Parallel implementation of a kalman filter for constituent data assimilation. *Mon. Wea. Rev.*, **125**, 1674-1686.
- Min, W., and S. D. Schubert, 1997: The climate signal in regional moisture fluxes: A comparison three global data assimilation products. *J. Climate*, **10**, 2623-2642.
- Park, C. -K., and S. D. Schubert, 1997: On the nature of the 1994 East Asian summer drought. *J. Climate*, **10**, 1056-1070.
- Riishojgaard, L. P., and E. Kallen, 1997: On the correlation between ozone and potential vorticity for large-scale Rossby waves. *J. Geophys. Res-Atmos.*, **102**, 8793-8804.
- Rood, R. B., A. R. Douglass, M. C. Cerniglia, and W. G. Read, 1997: Synoptic-scale mass exchange from the troposphere to the stratosphere. *J Geophys. Res-Atmos.*, **102**, 23467-23485.
- Schubert, S. D., W. Min, L. Takacs, and J. Joiner, 1997: Reanalysis of historical observations and its role in the development of the Goddard EOS climate data assimilation system. *Adv. Space Res.*, **19**, 491-501.
- Sienkiewicz, M. E., and J. Pfaendtner, 1997: Assimilation variability in the GEOS-1 data assimilation system. *Mon. Wea. Rev.*, **125**, 560-571.
- ## Mesoscale Atmospheric Processes Branch
- Anagnostou, E. N., and C. Kummerow, 1997: Stratiform/convective classification of rainfall using SSM/I 85 GHz brightness temperature observations. *J. Atmos. and Ocean Tech.*, **14**, 570-575.
- Borga, M., E. N. Anagnostou, and W. F. Krajewski, 1997: A simulation approach for validation of a bright band correction method. *J. of Appl. Meteor.*, **36**, 1507-1518.
- Caylor, I. J., G. M. Heymsfield, R. Meneghini, and L. S. Miller, 1997: Correction of sampling errors in ocean surface cross-sectional estimates from nadir-looking weather radar. *J. Atmos. and Oceanic Tech.*, **14**, 203-210.
- Chen, C., C. Bishop, G. S. Lai, and W.-K. Tao, 1997: Numerical simulations of an observed narrow cold frontal rainband. *Mon. Wea. Rev.*, **125**, 1027-1045.
- Chen, T. H., A. Henderson-Sellers, P. C. D. Milly, A. J. Pia, A. C. M. Beljaars, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, C. E. Desborough, R.E. Dickinson, L. Dumenil, M. Ek, J. R. Garratt, N. Gedney, Y. M. Gusev, J. Kim, R. Koster, E. A. Kowalczyk, K. Laval, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O. N. Nasonova, J. Noilhan, J. Polcher, A. Robock, C. Rosenzweig, J. Schaake, C. A. Schlosser, J.-P. Schulz, Y. Shao, A. B. Shmakin, D. L. Versegheghy, P. Wetzel, E. F. Wood, Y. Xue, Z.-L. Yang, and Q. Zeng, 1997: Cabauw experimental results from the project for intercomparison of land-surface parameterization schemes (PILPS). *J. Climate*, **10**, 1194-1215.

- Chou, S., R. M. Atlas, C. Shie, and J. Ardizzone, 1997: Air-sea fluxes retrieved from SSM/I data. *J. Geophys. Res.-Atmos.*, **102**, 12705-12726.
- Ciach, G. J., W. F. Krajewski, E. N. Anagnostou, M. L. Baeck, J. A. Smith, J. R. McCollum, and A. Kruger, 1997: Radar rainfall estimation for ground validation studies of the tropical rainfall measuring mission. *J. of Appl. Meteor.*, **36(6)**, 735-747.
- Cuomo, V., P. Digirolamo, F. Esposito, G. Pappalardo, C. Serio, N. Spinelli, M. Armenante, B. Bartoli, V. Berardi, R. Buzzese, C. Belleci, G. E. Caputi, F. Dedonato, P. Gaudio, M. Valentini, H. Melfi, and M. P. McCormick, 1997: The lite correlative measurements campaign in Southern Italy- preliminary results. *Applied Physics B-Lasers and Optics*, **64**, 553-559.
- de la Beaujardiere, J. F., J. Cavallo, A. Hasler, H. Mitchell, C. O'Handley, R. Shirai, and R. White, 1997: The GLOBE visualization project: using WWW in the classroom. *J. Sci. Edu. & Tech.*, **6**, 15-22.
- Dharssi, I., R. Kershaw, and W. K. Tao, 1997: Sensitivity of a simulated tropical squall line to long-wave-radiation. *Quart. J. Roy. Meteor. Soc.*, **13**, 187-206.
- Duda, D., and J. D. Spinhirne, 1997: Split-window retrieval of particle size and optical depth in contrails located above horizontally inhomogeneous ice clouds. *Geophys. Res. Lett.*, **23**, 3711-3714.
- Evans, K. D., S. H. Melfi, R. A. Ferrare, and D. N. Whiteman, 1997: Upper-tropospheric temperature-measurements with the use of a raman lidar. *Applied Optics*, **36**, 2594-2602.
- Haddad, Z. S., E. Smith, C. D. Kummerow, M. R. Farrar, S. L. Durden, and W. S. Olson, 1997: The TRMM 'day-1' radar/radiometer combined rain-profiling algorithm. *J. Meteor. Soc. Japan*, **75(4)**, 799-808.
- Halthore, R. N., S. E. Schwartz, J. J. Michalsky, G. P. Anderson, R. A. Ferrare, B. N. Holben, and H. M. T. Brink, 1997: Comparison of model estimated and measured direct-normal solar irradiance. *J. Geophys. Res.-Atmos.*, **102**, 29, 991-30, 002.
- Huffman, G. J., R. F. Adler, P. Arkin, A. Chang, R. Ferraro, A. Gruber, J. Janowiak, A. McNab, B. Rudolf, and U. Schneider, 1997: The global precipitation climatology project (GPCP) combined precipitation dataset. *Bull. Amer. Meteor. Soc.*, **78**, 5-20.
- Huffman, G. J., 1997: Estimates of root-mean-square random error for finite samples of estimated precipitation. *J. Appl. Meteor.*, **36(9)**, 1191-1201.
- Koch, S. E., and C. O'Handley, 1997: Operational forecasting and detection of mesoscale gravity waves. *Weather and Forecasting*, **12**, 253-281.
- Korb, C. L., B. M. Gentry, and S. X. F. Li, 1997: Edge technique Doppler lidar wind measurements with high vertical resolution. *Appl. Optics*, **36**, 5976-5983.
- Kuo, Y. H., J. F. Bresch, M. D. Cheng, J. Kain, D. B. Parsons, W. K. Tao, and D. L. Zhang, 1997: Summary of a mini workshop on cumulus parameterization for mesoscale models. *Bull. Amer. Meteor. Soc.*, **78**, 475-491.
- McGill, M., M. Marzouk, V. S. Scott, and J. D. Spinhirne, 1997: Holographic circle-to-point converter with particular applications for lidar work. *Optical Engineering*, **36**, 2171-2175.
- Melfi, S. H., K. D. Evans, J. Li, D. Whiteman, R. Ferrare, and G. Schwemmer, 1997: Observation of raman-scattering by cloud droplets in the atmosphere. *Applied Optics*, **36**, 3551-3559.
- Moncrieff, M. W., S. K. Krueger, D. Gregory, J.-L. Redelsperger, and W. -K. Tao, 1997: GEWEX cloud system study (GCSS) working group 4: precipitating convective cloud systems. *Bull. Amer. Meteor. Soc.*, **78**, 831-845.
- Santos, P., and A. J. Negri, 1997: A comparison of the normalized difference vegetation index and rainfall for the Amazon and northeastern Brazil. *J. Appl. Meteor.*, **36**, 958-965.
- Simpson, J., E. Ritchie, G. J. Holland, J. Halverson, and S. Stewart, 1997: Mesoscale interactions in torical cyclone genesis. *Mon. Wea. Rev.*, **125(10)**, 2645-2661.

Spinhirne, J. D., S. Chudamani, J. F. Cavanaugh, and J. L. Buffon, 1997: Aerosol and cloud backscatter at 1.06 and 0.53  $\mu\text{m}$  by hard target calibrated airborne Nd: YAG/methane raman lidar. *Applied Optics*, **35**, 3475-3490.

Tao, W.-K., J. Simpson, and B. Ferrier, 1997: Cloud resolving model simulations of mesoscale convective systems. *New Insights and Approaches to Convective Parameterization*, Ed. D. Gregory, 77-112.

Tsintikidis, D., J. L. Haferman, E. N. Anagnostou, W. F. Krajewski, and T. F. Smith, 1997: A neural network approach to estimating rainfall from spaceborne microwave data. *IEEE Trans. in Geoscience and Remote Sens.*, **35(5)**, 1079-93.

Wang, J. R., J. D. Spinhirne, P. Racette, W. D. Hart, 1997: The effect of clouds on water vapor profiling from millimeter-wave radiometric measurements. *J. Appl. Meteor.*, **36**, 1232-1244.

## Climate and Radiation Branch

Bony, S., Y. Sud, K. M. Lau, J. Susskind, and S. Saha, 1997: Comparison and satellite assessment of DAO and NCEP/NCAR re-analysis over tropical ocean: atmospheric hydrology and radiation. *J. Climate*, **10**, 1441-1462.

Bony, S., K. M. Lau, and Y. Sud, 1997: Sea surface temperature and large scale circulation influences on tropical greenhouse effect and cloud radiative forcing. *J. Climate*, **10**, 2055-2077.

Chao, W. C., and L. T. Deng, 1997: Phase-lag between deep cumulus convection and low-level convergence in tropical synoptic-scale systems. *Mon. Wea. Rev.*, **125**, 549-559.

Chou, M. D., and W. Zhao, 1997: Estimation and model validation of surface solar radiation and cloud radiative forcing using TOGA-COAR. *J. Climate*, **10**, 610-620.

Davis, A., A. Marshak, R. Cahalan, and W. Wiscombe, 1997: The landsat scale break in stratocumulus as a 3-dimensional radiative-transfer effect - implications for cloud remote-sensing. *J. Atmos. Sci.*, **54**, 241-260.

Davis, A., D. Winker, A. Marshak, R. Cahalan, J. Spinhirne, S. Love, H. Melfi, and W. Wiscombe, 1997: Retrieval of physical and optical cloud thickness from space-borne and wide-angle lidar. *Adv. Atmos. Remote Sensing with Lidar*, Springer-Verlag, 3 pp.

Davis, A., A. Marshak, R. Cahalan, and W. Wiscombe, 1997: Horizontal radiative fluxes in stratocumulus and the landsat scale-break. *J. Atmos. Sci.*, **54**, 241-260.

Davis, A., A. Marshak, W. Wiscombe, and R. F. Cahalan, 1997: Evidence for net horizontal radiative fluxes in marine stratocumulus. *IRS'96: Current Problems in Atmospheric Radiation*, W. L. Smith and K. Stamnes, Eds., Deepak Publ., 809-812.

Kaufman, Y. J., D. Tanre", L. Remer, E. Vermote, A. Chu, and B. N. Holben, 1997: Remote sensing of tropospheric aerosol from EOS-MODIS over the land using dark targets and dynamic aerosol models. *J. Geophys. Res-Atmos.*, **102**, 17051-17067.

Kaufman, Y. J., D. Tanre', H. R. Gordon, T. Nakajima, J. Lenoble, R. Frouin, H. Grassl, B. M. Herman, M. D. King, and P. M. Teillet, 1997: Passive remote sensing of tropospheric aerosol and atmospheric correction for the aerosol effect. *J. Geophys. Res-Atmos.*, **102**, 16815-16830.

Kaufman, Y. J., and R. S. Fraser, 1997: The effect of smoke particles on clouds and climate forcing. *Science*, **277**, 1636-1639.

Kaufman, Y. J., D. Tanre', L. Remer, E. Vermote, A. Chu, and B. N. Holben, 1997: Operational remote sensing of tropospheric aerosol over land from EOS moderate resolution imaging spectroradiometer. *J. Geophys. Res-Atmos.*, **102**, 17051-17067.

Kaufman, Y. J., A. E. Wald, L. A. Remer, B. C. Gao, R. R. Li, and L. Flynn, 1997: The MODIS 2.1-mu m channel - Correlation with visible reflectance for use in remote sensing of aerosol. *IEEE Trans. on Geosci. and Rem. Sen.*, **35**, 12286-1298.

- Krishnakumar, V., and K. M. Lau, 1997: Symmetric instability of monsoon flows. *Tellus*, **49A**, 228-245.
- Lau, K. M., H. T. Wu, and S. Bony, 1997: The role of large scale atmospheric circulation in the relationship between tropical convection and sea surface temperature. *J. Climate*, **10**, 381-392.
- Lau, K. M., and C. H. Sui, 1997: Mechanism of short-term sea surface temperature regulations: observations during TOGA-COARE. *J. Climate*, **10**, 465-472.
- Lau, K. M., and S. Yang, 1997: Climatology and interannual variability of the Southeast Asian summer monsoon. *Adv. Atmos. Sci.*, **14**, 141-162.
- Liang, S., Fallah-Adi, J. Jaha, Y. J. Kaufman, and J. R. G. Townshend, 1997: An operational atmospheric correction algorithm for landsat thematic mapper imagery over the land. *J. Geophys. Res.-Atmos.*, **102**, 17173-17186.
- Marshak, A., A. Davis, R. F. Cahalan, and W. J. Wiscombe, 1997: Physical simulation of high-resolution satellite images for fractal cloud model. *Fractal Frontiers*, 301-310.
- Marshak, A., A. Davis, W. Wiscombe, and R. Cahalan, 1997: Scale invariance of liquid water distributions in marine stratocumulus, Part II: Multifractal properties and model validation. *J. Atmos. Sci.*, **54**, 1423-1444.
- Marshak, A., A. Davis, R. Cahalan, and W. Wiscombe, 1997: The effect of horizontal fluxes on cloud absorption estimates based on simulated two-aircraft measurements of fractal clouds. *IRS '96: Current Problems in Atmospheric Radiation*, W. L. Smith and K. Stamnes, Eds., Deepak Publ., 415-418.
- Marshak, A., A. Davis, R. F. Cahalan, and W. Wiscombe, 1997: Nonlocal independent pixel approximation: for computing radiation fields of inhomogeneous clouds. *IRS '96: Current Problems in Atmospheric Radiation*, W. L. Smith and K. Stamnes, Eds., Deepak Publ., 809-812.
- Marshak, A., A. Davis, W. Wiscombe, and R. Cahalan, 1997: Inhomogeneity effects on cloud shortwave absorption measurements: Two-aircraft simulations. *J. Geophys. Res.*, **102**, 16619-16637.
- Mehta, V. M., and K. M. Lau, 1997: Influence of solar irradiance on the indian monsoon-enso relationship at decadal-multidecadal time scales. *Geophys. Res. Lett.*, **24**, 159-162.
- Nicholson, S. E., J. A. Marengo, J. Kim, A. R. Lare, S. Galle, and Y. H. Kerr, 1997: A daily resolution evapoclimatonomy model applied to surface water balance calculations at the HAPEX-Sahel supersites. *J. Hydrology*, **189**, 946-964.
- Pincus, R., M. B. Baker, and C. S. Bretherton, 1997: What controls stratocumulus radiative properties? Lagrangian observations of cloud evolution. *J. Atmos. Sci.*, **54**, 2215-2236.
- Pinker, R. T., R. A. Ferrare, A. Karnieli, T. O. Aro, Y. J. Kaufman, and A. Zangvil, 1997: Aerosol optical depth in semiarid region. *J. Geophys. Res.-Atmos.*, **102**, 11123-11137.
- Remer, L. A., S. Gasso, D. Hegg, Y. J. Kaufman, and B. N. Holben, 1997: Urban/industrial aerosol: ground based sun/sky radiometer and airborne in situ measurements. *J. Geophys. Res.-Atmos.*, **102**, 16849-16859.
- Scott, R., D. Entekhabi, R. Koster, and M. Suarez, 1997: Time scales of land surface evapotranspiration response. *J. Climate*, **10**, 559-566.
- Sui, C. H., X. Li, K. M. Lau, and D. Adamec, 1997: Multi-scale air-sea interactions during TOGA COARE. *Mon. Wea. Rev.*, **125**, 448-462.
- Sui, C. H., K. M. Lau, Y. Takayabu, and D. Short, 1997: Diurnal variations in tropical oceanic cumulus convection during TOGA COARE. *J. Atmos. Sci.*, **54**, 637-655.
- Tanre', D. Y. J. Kaufman, M. Herman, and S. Mattoo, 1997: Remote sensing of aerosol properties over oceans using the MODIS/EOS spectral radiances. *J. Geophys. Res.-Atmos.*, **102**, 16971-16988.

Vermote, E. F., N. El Saleous, C. O. Justice, Y. J. Kaufman, J. L. Privette, L. Remer, J. C. Roger, and D. Tanre', 1997: Atmospheric correction of visible to mid-IR EOS-MODIS data over land surface, background, operational algorithm and validation. *J. Geophys. Res-Atmos.*, **102**, 17173-17186.

Vermote, E. F., N. El Saleous, Y. J. Kaufman, and E. Dutton, 1997: Data pre-processing: stratospheric aerosol perturbing effect on the remote sensing of vegetation. *Rem. Sens. Rev.*, **15**, 7-21.

Vermote, E. F., D. Tanre', J. L. Deuze, M. Herman, and J. J. Morcette, 1997: Second simulation of the satellite signal in the solar spectrum, 6S: an overview. *IEEE Transactions on Geoscience and Remote Sensing*, **35**, 675-686.

Wang, B., X. Li, and L. Wu, 1997: Direction of Hurricane Beta drift in horizontally sheared flows. *J. Atmos. Sci.*, **54**, 1462-1471.

## Atmospheric Experiment Branch

Atreya, S., M. Wong, T. Owen, H. Niemann, and P. Mahaffy, 1997: Chemistry and clouds of the atmosphere of Jupiter: A Galileo perspective. *Three Galileos: The Man, The Spacecraft, The Telescope*. J. Rahe, C. Barbieri, T. Johnson, A. Sohus, Eds., Kluwer Academic Publishers, p. 225-257.

Kasprzak, W. T., G. M. Keating, N. C. Hsu, A. I. Stewart, W. B. Colwell, and W. B. Bougher, 1997: Solar activity behavior of the thermosphere. *Venus II*. S. W. Bougher and R. J. Phillips, University of Arizona, 225-257.

Wolff, C., 1997: Large convective events and their aftermath in a rotating star. *Astrophysical Journal*, **486**, 1058.

## Atmospheric Chemistry and Dynamics Branch

Aikin, A.C., 1997: Production of stratospheric HNO<sub>3</sub> by different ion-molecule reaction mechanisms. *J. Geophys. Res-Atmos.*, **102**, 12921-12925.

Allen, D. J., K. E. Pickering, and A. Molod, 1997: An evaluation of deep convection mixing in the Goddard Chemical Transport Model using International Satellite Cloud Climatology Project cloud parameters. *J. Geophys. Res-Atmos.*, **102**, 25467-25476.

Allen, D. J., P. Kasibhatla, A. M. Thompson, R. B. Rood, B. G. Doddridge, K. E. Pickering, R. D. Hudson, and S. J. Lin, 1997: Transport-induced interannual variability of carbon monoxide determined using a chemistry and transport model. *J. Geophys. Res-Atmos.*, **101**, 28655-28669.

Allen, D.R., and R. A. Reck, 1997: Daily variations in TOMS total ozone data. *J. Geophys. Res-Atmos.*, **102**, 13603-13608.

Allen, D. R., J. L. Stanford, L. S. Olson, E. F. Fishbein, L. Froidevaux, and J. W. Waters, 1997: The 4-day wave as observed from the Upper Atmosphere Research Satellite microwave limb sounder. *J. Atmos. Sci.*, **54**, 420-434.

Bevilacqua, R. M., C. P. Aellig, D. J. Debreystian, M. D. Fromm, K. Hoppel, J. D. Lumpe, E. P. Shettle, J. S. Hornstein, C. E. Randall, D. W. Rusch, and J. E. Rosenfield, 1997: POAM II ozone observations in the Antarctic ozone hole in 1994, 1995, 1996. *J. Geophys. Res-Atmos.*, **102**, 23, 643-23, 657.

Bougher, S. W., J. Alexander, and H. G. Mayr, 1997: Upper atmosphere dynamics: Global circulation and gravity waves. *Venus II*. S. W. Bougher and R. J. Phillips, Eds., University of Arizona, 259-294.

Caudill, T. R., D. E. Flittner, B. M. Herman, O. Torres, and R. D. McPeters, 1997: Evaluation of the pseudo-spherical approximation for backscattered ultraviolet radiances and ozone retrieval. *J. Geophys. Res-Atmos.*, **102**, 3881-3890.

Chandra, S., C. H. Jackman, E. L. Fleming, and J. M. Russell, 1997: The seasonal and long-term changes in mesospheric water-vapor. *Geophys. Res. Lett.*, **24**, 639-642.

Chen, L., R. Herschel, D. B. Considine, C. H. Jackman, and J. A. Shorter, 1997: Chemical reaction rate sensitivity and uncertainty in a two-dimensional middle atmospheric ozone model. *J. Geophys. Res-Atmos.*, **102**, 16, 201-16, 214.

- Chen, L., H. Rabitz, D. B. Considine, C. H. Jackman, and J. A. Shorter, 1997: Chemical reaction rate sensitivity and uncertainty in a two-dimensional middle atmospheric ozone model. *J. Geophys. Res.-Atmos.*, **102**, 16201-16214.
- Cordero, E. C., S. R. Kawa, and M. R. Schoeberl, 1997: An analysis of tropical transport: Influence of the quasi-biennial oscillation. *J. Geophys. Res.-Atmos.*, **102**, 16453-16461.
- Coy, L., E. R. Nash, and P. A. Newman, 1997: Meteorology of the polar vortex: Spring 1997. *Geophys. Res. Lett.*, **24**, 2693-2696.
- Coy, L., and R. Swinbank, 1997: Characteristics of stratospheric winds and temperatures produced by data assimilation. *J. Geophys. Res.-Atmos.*, **102**, 25763-25781.
- Dessler, A. E., D. B. Considine, J. E. Rosenfield, S. R. Kawa, A. R. Douglass, and J. M. Russell, 1997: Lower stratospheric chlorine partitioning during the decay of the Mt Pinatubo aerosol cloud. *Geophys. Res. Lett.*, **24**, 1623-1626.
- Douglass, A. R., R. B. Rood, S. R. Kawa, and D. J. Allen, 1997: A three-dimensional simulation of the evolution of the middle latitude winter ozone in the middle stratosphere. *J. Geophys. Res.-Atmos.*, **102**, 19217-19232.
- Gao, R. S., D. W. Fahey, R. J. Salawitch, S. A. Lloyd, D. E. Anderson, R. Demajistre, C. T. McElroy, E. L. Woodbridge, R. C. Wamsley, S. G. Donnelly, L. A. Delnegro, M. H. Profitt, R. M. Stimpfle, D. W. Kohn, R. Kawa, L. R. Lait, M. Loewenstein, J. R. Podolske, E. R. Keim, J. E. Dye, J. C. Wilson, and K. R. Chan, 1997: Partitioning of the reactive nitrogen reservoir in the lower stratosphere of the southern-hemisphere- observations and modeling. *J. Geophys. Res.-Atmos.*, **102**, 3935-3949.
- Gross, M. R., T. J. McGee, R. A. Ferrare, V. N. Singh, and P. Kimvilakani, 1997: Temperature measurements made with a combined Rayleigh-Mie and raman lidar. *Applied Optics*, **36**, 5987-5995.
- Hansen, J., M. Sato, R. Ruedy, A. Lacis, K. Asamoah, K. Beckford, S. Borenstein, E. Brown, B. Cairns, B. Carlson, B. Curran, S. deCastro, L. Druyan, P. Etwarow, T. Ferede, M. Fox, D. Gaffen, J. Glascoe, H. Gordon, S. Hollandsworth, X. Jiang, C. Johnson, N. Lawrence, J. Lean, J. Lerner, K. Lo, J. Logan, A. Luckett, M. P. McCormick, R. McPeters, R. Miller, P. Minnis, I. Ramberran, G. Russell, P. Russell, P. Stone, I. Tegen, S. Thomas, L. Thomason, A. Thompson, J. Wilder, R. Willson, and J. Zawodny, 1997: Forcings and chaos in interannual to decadal climate change. *J. Geophys. Res.-Atmos.*, **102**, 25679-25720.
- Harris, N. R. P., G. Ancellet, L. Bishop, D. J. Hofmann, J. B. Kerr, R. D. McPeters, M. Prendez, W. J. Randel, J. Staehelin, B. H. Subbaraya, A. Volzthomas, J. Zawodny, and C. S. Zerefos, 1997: Trends in stratospheric and free tropospheric ozone. *J. Geophys. Res.-Atmos.*, **102**, 1571-0.
- Heaps, W. S., J. Burris, and J. A. French, 1997: Lidar technique for remote measurement of temperature by use of vibrational-rotational Raman spectroscopy. *Applied Optics*, **36**, 9402-9405.
- Herman, J. R., P. K. Bhartia, O. Torres, C. Hsu, C. Seftor, and E. Celarier, 1997: Global distribution of UV-absorbing aerosols from Nimbus 7/TOMS data. *J. Geophys. Res.-Atmos.*, **102**, 16911-16922.
- Hilsenrath, E., P. K. Bhartia, R. P. Cebula, and C. G. Wellemeyer, 1997: Calibration and intercalibration of backscatter ultraviolet (BUV) satellite ozone data. *Adv. in Space Res.*, **19**, 1345-1353.
- Hines, C. O., H. G. Mayr, and C. A. Reddy, 1997: On the analysis of geophysical-data for an unknown constant, exemplified by the problem of the 0+-0 collision cross-section. *J. Atmos. and Solar-Terrestrial Phys.*, **59**, 181-189.
- Hines, C. O., 1997: Doppler-spread parameterization of gravity-wave momentum deposition in the middle atmosphere. 1. Basic formulation. *J. Atmos. and Solar-Terr. Phys.*, **59**, 371-386.
- Hines, C. O., 1997: Doppler-spread parameterization of gravity-wave momentum deposition in the middle atmosphere. 2. Broad and quasi monochromatic spectra, and implementation. *J. Atmos. and Solar-Terr. Phys.*, **59**, 387-400.
- Hsu, N. C., R. D. McPeters, C. J. Seftor, and A. M. Thompson, 1997: Effect of an improved climatology on the total ozone mapping spectrometer total ozone retrieval. *J. Geophys. Res.-Atmos.*, **102**, 4247-4255.

- Jackman, C. H., E. L. Fleming, S. Chandra, D. B. Considine, and J. E. Rosenfield, 1997: Past, present, and future modeled ozone trends with comparisons to observed trends. *J. Geophys. Res.-Atmos.*, **101**, 28753-28767.
- Kawa, S. R., P. A. Newman, L. R. Lait, M. R. Schoeberl, R. M. Stimpfle, D. W. Kohn, C. R. Webster, R. D. May, D. Baumgardner, J. E. Dye, J. C. Wilson, K. R. Chan, and M. Loewenstein, 1997: Activation of chlorine in sulfate aerosol as inferred from aircraft observations. *J. Geophys. Res.-Atmos.*, **102**, 3921-3933.
- Krotkov, N. A., A. J. Krueger, and P. K. Bhartia, 1997: Ultraviolet optical model of volcanic clouds for remote sensing of ash and sulfur dioxide. *J. Geophys. Res.-Atmos.*, **102**, 21891-21904.
- Kumer, J. B., S. R. Kawa, A. E. Roche, J. L. Mergenthaler, S. E. Smith, F. W. Taylor, P. S. Connell, and A. R. Douglass, 1997: UARS first global N2O5 data sets - application to a stratospheric warming event in January 1992. *J. Geophys. Res.-Atmos.*, **102**, 3575-3582.
- Mahajan, K. K., W. R. Hoegy, W. D. Pesnell, L. H. Brace, and N. K. Sethi, 1997: A comparison of solar EUV flux from Langmuir probe photoelectron measurements on the Pioneer Venus Orbiter with other solar activity indicators. *Adv. Sp. Res.*, **20**, 187-190.
- Mayr, H. G., I. Harris, F. A. Herrero, and F. Varosi, 1997: Winds and composition changes in the thermosphere using the transfer-function model. *J. Atmos. and Solar-Terrestrial Phys.*, **59**, 691-709.
- McConnell, J. R., J. R. Winterle, R. C. Bales, A. M. Thompson, and R. W. Stewart, 1997: Physically-based inversion of surface snow concentrations of H2O2 to atmospheric concentrations at south-pole. *Geophys. Res. Lett.*, **24**, 441-444.
- McCormack, J. P., L. L. Hood, R. Nagatani, A. J. Miller, W. G. Planet, and R. D. McPeters, 1997: Approximate separation of volcanic and 11-year signals in the SBUV-SBUV/2 total ozone record over the 1979-1995 period. *Geophys. Res. Lett.*, **24**, 2729-2732.
- McMillan, W. W., L. L. Strow, W. L. Smith, H. E. Revercomb, H. L. Huang, A. M. Thompson, D. P. McNamara, and W. F. Ryan, 1997: Remote-sensing of carbon-monoxide over the continental United-States on September 12-13, 1993. *J. Geophys. Res.-Atmos.*, **102**, 10695-10709.
- McPeters, R. D., G. J. Labow, and B. J. Johnson, 1997: A satellite-derived ozone climatology for balloonsonde estimation of total column ozone. *J. Geophys. Res.-Atmos.*, **102**, 8875-8885.
- Miller, A. J., L. E. Flynn, S. M. Hollandsworth, J.J. Deluisi, I. V. Petropavlovskikh, G. C. Tiao, G. C. Reinsel, D. J. Wuebbles, J. Kerr, R. M. Nagatani, L. Bishop, and C. H. Jackman, 1997: Information content of Umkehr and solar backscattered ultraviolet (SBUV) 2 satellite data for ozone trends and solar responses in the stratosphere. *J. Geophys. Res.-Atmos.*, **102**, 19257-19263.
- Morris, G. A., D. B. Considine, A. E. Dessler, S. R. Kawa, J. Kumer, J. Mergenthaler, A. Roche, and J. M. Russell, 1997: Nitrogen partitioning in the middle stratosphere as observed by the upper-atmosphere research satellite. *J. Geophys. Res.-Atmos.*, **102**, 8955-8965.
- Newman, P. A., and J. E. Rosenfield, 1997: Stratospheric thermal damping times. *Geophys. Res. Lett.*, **24**, 433-436.
- Newman, P. A., J. F. Gleason, R. D. McPeters, and R. S. Stolarski, 1997: Anomalously low ozone over the Arctic. *Geophys. Res. Lett.*, **24**, 2689-2692.
- Olson, J., M. Prather, T. Berntsen, G. Carmichael, R. Chatfield, P. Connell, R. Derbuent, L. Horowitz, S. Jin, M. Kanakidou, P. Kasibhatla, R. Kotamarthi, S. Sillman, F. Stordal, A. Thompson, and O. Wild, 1997: Results from intergovernmental panel on climatic change photochemical model intercomparison (PhotoComp). *J. Geophys. Res.-Atmos.*, **102**, 5979-5991.
- Patra, P. K., S. Lal, B. H. Subbaraya, C. H. Jackman, and P. Rajaratnam, 1997: Observed vertical profile of sulfur-hexafluoride ( $SF_6$ ) and its atmospheric applications. *J. Geophys. Res.-Atmos.*, **102**, 8855-8859.

- Polyak, I., R. North, P. A. Kucera, and N. R. Smith, 1997: Variability of the tropical ocean-global atmosphere coupled ocean-atmosphere response experiment rain rate observations. *J. Geophys. Res-Atmos.*, **102**, 11, 103-11, 111.
- Rosenfield, J. E., D. B. Considine, P. E. Meade, J. T. Bacmeister, C. H. Jackman, and M. R. Schoeberl, 1997: Stratospheric effects of Mount-Pinatubo aerosol studied with a coupled 2-dimensional model. *J. Geophys. Res-Atmos.*, **102**, 3649-3670.
- Schnetzler, C. C., G. J. Bluth, A. J. Krueger, and L. S. Walter, 1997: A proposed volcanic sulfur dioxide index (VSI). *J. Geophys. Res-Atmos.*, **102**, 20087-20091.
- Schoeberl, M. R., A. E. Roche, J. M. Russell, D. Ortland, P. B. Hays, and J. W. Waters, 1997: An estimation of the dynamical isolation of the tropical lower stratosphere using UARS wind and trace gas observations of the quasi-biennial oscillation. *Geophys. Res. Lett.*, **24**, 53-56.
- Schoeberl, M. R., A. E. Roche, J. M. Russell III, D. Ortland, P. B. Hays, and J. W. Waters, 1997: An estimation of the dynamical isolation of the tropical lower stratosphere using UARS wind and trace gas observations of the quasi-biennial oscillation. *Geophys. Res. Lett.*, **24**, 53-56.
- Seftor, C. J., G. Jaross, J. R. Herman, X. Gu, L. Moy, S. L. Taylor, and C. G. Wellemeyer, 1997: The Meteor 3 total ozone mapping spectrometer version 7 data set: Calibration and analysis. *J. Geophys. Res-Atmos.*, **102**, 19247-19256.
- Seftor, C. J., N. C. Hsu, J. R. Herman, P. K. Bhartia, O. Torres, W. I. Rose, D. J. Schneider, and N. Krotkov, 1997: Detection of volcanic ash clouds from Nimbus 7/total ozone mapping spectrometer. *J. Geophys. Res-Atmos.*, **102**, 16749-16759.
- Sparling, L. C., J. A. Kettleborough, P. H. Haynes, M. E. McIntyre, J. E. Rosenfield, M. R. Schoeberl, and P. A. Newman, 1997: Diabatic cross-isentropic dispersion in the lower stratosphere. *J. Geophys. Res-Atmos.*, **102**, 25817-25829.
- Stanford, J. L., and J. R. Ziemke, 1997: A practical method for predicting midlatitude total column ozone from operational forecast temperature fields. *J. Geophys. Res.*, **101**, 28, 769-28, 773.
- Stevens, M. H., D. E. Siskind, E. Hilsenrath, R. P. Cebula, J. W. Leitch, J. M. Russell, and L. L. Gordley, 1997: Shuttle solar backscatter UV observations of Nitric-Oxide in the upper-stratosphere, mesosphere, and thermosphere - comparisons with the halogen occultation experiment. *J. Geophys. Res-Atmos.*, **102**, 9717-9727.
- Stolarski, R. S., G. J. Labow, and R. D. McPeters, 1997: Springtime antarctic total ozone measurements in the early-1970s from the BUV instrument on Nimbus-4. *Geophys. Res. Lett.*, **24**, 591-594.
- Syktus, J., J. Chappell, R. Oglesby, J. Larson, S. Marshall, and B. Saltzman, 1997: Latitudinal dependence of signal-to-noise patterns from two general circulation models with CO<sub>2</sub> forcing. *Climate Dynamics*, **13**, 293-302.
- Tegen, I., P. Hollrig, M. Chin, I. Fung, D. Jacob, and J. Penner, 1997: Contribution of different aerosol species to the global aerosol extinction optical thickness: Estimates from model results. *J. Geophys. Res-Atmos.*, **102**, 23, 895-23, 915.
- Thompson, A. M., W. -K. Tao, K. E. Pickering, J. Scala, and J. Simpson, 1997: Tropical deep convection and ozone formation. *Bull. Amer. Meteor. Soc.*, **78**, 1043-1054.
- Tyson, P. D., M. Garstang, A. M. Thompson, P. D'Abreton, R. D. Diab, and E. V. Browell, 1997: Atmospheric transport and photochemistry of ozone over central Southern Africa during the Southern Africa Fire-Atmosphere Research Initiative. *J. Geophys. Res-Atmos.*, **102**, 10, 623-10, 635.
- Waugh, D. W., R. A. Plumb, J. W. Elkins, D. W. Fahey, K. A. Boering, G. S. Dutton, C. M. Volk, E. Keim, R. S. Gao, B. C. Daube, S. C. Wofsy, M. Loewenstein, J. R. Podolske, K. R. Chan, M. H. Proffitt, K. Kelly, P. A. Newman, and L. R. Lait, 1997: Mixing of polar vortex air into middle latitudes as revealed by tracer-tracer scatterplots. *J. Geophys. Res-Atmos.*, **102**, 13119-13134.
- Wellemeyer, C. G., S. L. Taylor, C. J. Seftor, R. D. McPeters, and P. K. Bhartia, 1997: A correction for total ozone mapping spectrometer profile shape errors at high-latitude. *J. Geophys. Res-Atmos.*, **102**, 9029-9038.

Yudin, V. A., M. A. Gellar, B. V. Khattatov, A. R. Douglass, M. C. Cerniglia, J. W. Waters, L. S. Elson, A. E. Roche, and J. M. Russell, 1997: A UARS study of lower stratospheric polar processing in the early stages of northern and southern winters. *J. Geophys. Res.-Atmos.*, **102**, 19137-19148.

Ziemke, J. R., S. Chandra, R. D. McPeters, and P. A. Newman, 1997: Dynamical proxies of column ozone with applications to global trend models. *J. Geophys. Res.-Atmos.*, **102**, 6117-6129.

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